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#1	(fan or fans or blower* or impeller* or propeller* or vane* or windvane*) <near/5> (housing* or cage or cages or enclosure* or case* or casing* or container*) <in> pdfdata	1099
#2	(fan or fans or blower* or impeller* or propeller* or vane* or windvane*) <near/5> (housing* or cage or cages or enclosure* or case* or casing* or container*) <near/5> (design* or build* or built or construct* or generat* or deriv* or calculat* or develop* or produc* or form* or formed or forming or formation or fabricat* or assembl* or compute or computes or computed or computing or creat*) <in> pdfdata	591
#3	(fan or fans or blower* or impeller* or propeller* or vane* or windvane*) <near/5> (housing* or cage or cages or enclosure* or case* or casing* or container*) <near/5> (design* or build* or built or construct* or generat* or deriv* or calculat* or develop* or produc* or form* or formed or forming or formation or fabricat* or assembl* or compute or computes or computed or computing or creat*) <in> pdfdata	591
#4	(fan or fans or blower* or impeller* or propeller* or vane* or windvane*) <near/5> (housing* or cage or cages or enclosure* or case* or casing* or container*) <near/5> (design* or build* or built or construct* or generat* or deriv* or calculat* or develop* or produc* or form* or formed or forming or formation or fabricat* or assembl* or compute or computes or computed or computing or creat*) <in> pdfdata	591
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#9	(fan or fans or blower* or impeller* or propeller* or vane* or windvane*) <near/5> (housing* or cage or cages or enclosure* or case* or casing* or container*) and ((wheel or fan or blower or impeller or propeller or vane or windvane) <near/5> (dimension* or depth or deep or size or height or width or length)) and ((wheel or circle or circular or wheel or fan or blower or impeller or propeller or vane or windvane) <near/5>	12

radius) and ((wheel or circle or circular or wheel or fan or blower or impeller or propeller or vane or windvane) <near/5> angl*) <in> pdfdata

Clear Session History

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File   8:Ei Compendex(R) 1884-2006/Nov W1
         (c) 2006 Elsevier Eng.  Info. Inc.
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         (c) 2006 ProQuest Info&Learning
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         (c) 2006 BLDSC all rts. reserv.
File   2:INSPEC 1898-2006/Nov W2
         (c) 2006 Institution of Electrical Engineers
File  94:JICST-EPlus 1985-2006/Aug W1
         (c)2006 Japan Science and Tech Corp(JST)
File   6:NTIS 1964-2006/Nov W2
         (c) 2006 NTIS, Intl Cpyrght All Rights Res
File 144:Pascal 1973-2006/Oct W5
         (c) 2006 INIST/CNRS
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 2006 The Thomson Corp
File  34:SciSearch(R) Cited Ref Sci 1990-2006/Nov W2
         (c) 2006 The Thomson Corp
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         (c) 2006 CSA.
File  62:SPIN(R) 1975-2006/Nov W2
         (c) 2006 American Institute of Physics
File 239:Mathsci 1940-2006/Dec
         (c) 2006 American Mathematical Society

Set     Items   Description
S1     199703   FAN? ? OR BLOWER? ? OR IMPELLER? ? OR PROPELLER? ? OR VANE?
               ? OR WINDVANE? ?
S2       5993   S1(7N)(HOUSING? ? OR CAGE OR CAGES OR ENCLOSURE? ? OR CASE?
               ? OR CASING? ? OR CONTAINER? ?)
S3       9744   (WHEEL OR S1)(5N)(DIMENSION? ? OR DEPTH OR DEEP OR SIZE OR
              HEIGHT OR WIDTH OR LENGTH)
S4       9447   (WHEEL OR CIRCLE OR CIRCULAR OR S1)(5N)RADIUS
S5       8606   (WHEEL OR CIRCLE OR CIRCULAR OR S1)(5N)ANGL???
S6          0   S2 AND S3 AND S4 AND S5
S7        957   S2(5N)(DESIGN? OR BUILD??? OR BUILT OR CONSTRUCT? OR GENER-
              AT? OR DERIV? OR CALCULAT? OR DEVELOP? OR PRODUC? OR FORM? ? -
              OR FORMED OR FORMING OR FORMATION OR FABRICAT? OR ASSEMBL? OR
              COMPUTE OR COMPUTES OR COMPUTED OR COMPUTING OR CREAT?)
S8         90   S7 AND S3:S5
S9          0   S7 AND S3 AND S4
S10         2   S7 AND S3 AND S5
S11         3   S7 AND S4 AND S5
S12      1721   (FAN OR BLOWER)(5N)(HOUSING? ? OR CAGE OR CAGES OR ENCLOSU-
              RE? ? OR CASE? ? OR CASING? ?)
S13        30   S8 AND S12
S14        33   S10:S11 OR S13
S15        22   RD  (unique items)
S16     90515   AU=(CHEN, Y? OR CHEN Y?)
S17        11   AU=(CHEN, YUQI OR CHEN YUQI)
S18        13   S16:S17 AND S2
S19        10   RD  (unique items)          (no relevant papers by author)
```

15/5/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

11025960 E.I. No: EIP06219888580
Title: Development of autonomous design technique for axial fans using numerical optimization
Author: Iwase, Taku; Sugimura, Kazuyuki; Tanno, Taro
Corporate Source: Mechanical Engineering Research Laboratory Hitachi, Ltd., Hitachinaka, Ibaraki 312-0034, Japan
Conference Title: 2005 ASME Fluids Engineering Division Summer Meeting, FEDSM2005
Conference Location: Houston, TX, United States Conference Date: 20050619-20050623
Sponsor: ASME Fluids Engineering Division
E.I. Conference No.: 67273
Source: Proceedings of 2005 ASME Fluids Engineering Division Summer Meeting, FEDSM2005 Proceedings of 2005 ASME Fluids Engineering Division Summer Meeting, FEDSM2005 v 2005 2005.
Publication Year: 2005
Language: English
Document Type: CA; (Conference Article) Treatment: T; (Theoretical)
Journal Announcement: 0606W1
Abstract: We designed an axial fan for servers using computational fluid dynamics (CFD) and numerical optimization. The performance of the fan, namely static pressure rise and efficiency, was calculated using commercial CFD software based on an incompressible Reynolds-averaged Navier-Stokes (RANS) solver. An automatic program developed in-house was used to generate the grids for CFD calculation. Numerical optimization - using a simulated annealing algorithm (SA) -was used for determining the optimized shape of the fan. After optimizing the fan, initial and optimized fan designs were made for experiments using rapid prototyping, and their performances, based on such things as efficiency and noise level, were measured. Results demonstrated that the optimized fan design achieved higher efficiency than the initial design. Multi optimization was also developed for maximizing the fan efficiency and minimizing the casing height . An additional finding was that there was a trade-off between the fan efficiency and casing height . Copyright copy 2005 by ASME. 4 Refs.
Descriptors: *Axial flow; Fans; Optimization; Computer simulation; Computational fluid dynamics; Computer software; Rapid prototyping; Automatic programming
Identifiers: Static pressure rise; Optimized fan designs; Trade-off; Noise level
Classification Codes:
631.1 (Fluid Flow, General); 618.3 (Blowers & Fans); 921.5 (Optimization Techniques); 723.5 (Computer Applications); 931.1 (Mechanics); 723.1 (Computer Programming)
631 (Fluid Flow); 618 (Compressors & Pumps); 921 (Applied Mathematics); 723 (Computer Software, Data Handling & Applications); 931 (Applied Physics Generally)
63 (FLUID FLOW; HYDRAULICS, PNEUMATICS & VACUUM); 61 (MECHANICAL ENGINEERING, PLANT & POWER); 92 (ENGINEERING MATHEMATICS); 72 (COMPUTERS & DATA PROCESSING); 93 (ENGINEERING PHYSICS)

15/5/2 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

09442043 E.I. No: EIP03287539284
Title: Low noise cooling fan integration in an induction machine application
Author: Hyrynen, Johannes; Karjalainen, Ari
Corporate Source: VTT Industrial Systems, 33101 Tampere, Finland
Source: Acta Acustica (Stuttgart) v 89 n SUPP. May/June 2003. p S32-S33
Publication Year: 2003
CODEN: AAACFD ISSN: 1610-1928
Language: English
Document Type: JA; (Journal Article) Treatment: G; (General Review)
Journal Announcement: 0307W3
Abstract: Many machinery applications require cooling. Cooling is

provided normally by fans, which sometimes generate excessive noise even compared to the machine, itself. By adequate design it is possible to reduce the noise generated by the fan in its application. The design process consists of the selection of the fan impeller and design of the casing including the surrounding structures of the fan . A number of various impeller types were experimentally tested in order to find the best solution for an induction machine cooling application without using additional noise control means. The study included axial fans of several diameter and blade angle combinations, two different axial fan designs and radial fans. All the fans were selected to suit the same cooling requirements. The effects of some surrounding structure alternatives were also reviewed. For each fan design both the performance and sound power were measured. The results are presented as performance and specific sound power curves, which give a wider perspective of the fan operation. The results are also reviewed as 1/3-octave band frequency spectra. This study shows that the selection of the fan and design of the arrangement play a significant role considering the sound power generated.

Descriptors: *Fans; Acoustic noise; Asynchronous machinery; Cooling systems; Machine design; Rotors; Frequencies; Equipment testing; Turbomachine blades

Identifiers: Low noise cooling fan; Fan impeller ; Noise control mean; Blade angle combination

Classification Codes:

618.3 (Blowers & Fans); 751.4 (Acoustic Noise); 705.1 (Electric Machinery, General); 641.2 (Heat Transfer); 601.1 (Mechanical Devices); 601.2 (Machine Components)

618 (Compressors & Pumps); 751 (Acoustics, Noise & Sound); 705 (Electric Generators & Motors); 641 (Heat & Mass Transfer; Thermodynamics) ; 601 (Mechanical Design)

61 (MECHANICAL ENGINEERING, PLANT & POWER); 75 (SOUND & ACOUSTICAL TECHNOLOGY); 70 (ELECTRICAL ENGINEERING, GENERAL); 64 (HEAT & THERMODYNAMICS); 60 (MECHANICAL ENGINEERING, GENERAL)

15/5/3 (Item 3 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

09258209 E.I. No: EIP03017304131

Title: Selecting the right preheater fan and drive

Author: Turnell, Victor J.

Conference Title: IEEE-IAS/PCA 2002Cement Industry Technical Conference: Conference Record

Conference Location: Jacksonville, FL, United States Conference Date: 20020505-20020509

Sponsor: IEEE

E.I. Conference No.: 60569

Source: IEEE Cement Industry Technical Conference (Paper) 2002. p 95-106 (IEEE cat n 02ch37282)

Publication Year: 2002

CODEN: ICIPDM ISSN: 0731-4906

Language: English

Document Type: CA; (Conference Article) Treatment: G; (General Review)

Journal Announcement: 0301W1

Abstract: The preheater fan is a key piece of equipment in any cement plant. In many cases , this fan limits clinker production by limiting the gas flow through the preheater. It consumes about 10 percent of the total power used at the plant. Large gas flows, high gas temperatures and static pressure, and the potential for material abrasion and buildup on the impeller makes the design of a fan for this application complex. Selecting the optimum fan and drive requires careful consideration of each application and of all design options available. Preheater fans proposed by vendors in recent projects vary significantly. For example, some vendor's proposed single width , single inlet type fans , while others proposed double width , double inlet type fans . Some vendors proposed radial blade fans while others proposed backward curved or airfoil fans. The degree of wear protection also differed significantly. This paper discusses various topics that are important when selecting a fan and drive for this application. Topics discussed are: the process requirements and conditions, the options available for fans and drives, the advantages and disadvantages of fans and drives available, and the impacts of each fan and drive on capital and operating costs. 3 Refs.

Descriptors: *Cement plants; Preheating; Wear of materials; Abrasion; Electric potential
Identifiers: Preheater fans
Classification Codes:
412.1 (Cement); 642.1 (Process Heating); 931.2 (Physical Properties of Gases, Liquids & Solids); 604.1 (Metal Cutting); 701.1 (Electricity, Basic Concepts & Phenomena)
412 (Concrete); 642 (Industrial Furnaces & Process Heating); 931 (Applied Physics Generally); 604 (Metal Cutting & Machining); 701 (Electricity & Magnetism)
41 (CONSTRUCTION MATERIALS); 64 (HEAT & THERMODYNAMICS); 93 (ENGINEERING PHYSICS); 60 (MECHANICAL ENGINEERING, GENERAL); 70 (ELECTRICAL ENGINEERING, GENERAL)

15/5/4 (Item 4 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

09257969 E.I. No: EIP03017303858
Title: Multizone modeling approaches to contaminant-based design
Author: Musser, Amy; Persily, Andrew K.
Corporate Source: University of Nebraska-Lincoln, Lincoln, NE, United States
Conference Title: ASHRAE Transactions 2002
Conference Location: Honolulu, HI, United States Conference Date: 20020622-20020626
E.I. Conference No.: 60567
Source: ASHRAE Transactions v 108 PART 2 2002. p 803-810
Publication Year: 2002
CODEN: ASHTAG ISSN: 0001-2505
Language: English
Document Type: CA; (Conference Article) Treatment: T; (Theoretical)
Journal Announcement: 0301W1
Abstract: Indoor air quality is currently addressed in the design process primarily through prescriptive building codes based on specified flow rates. However, a contaminant-based design approach opens the door to design innovation, offering opportunities for improved indoor air quality, energy conservation, and reduced environmental impact. This paper discusses current design approaches and some possibilities for the future of contaminant-based design. Techniques and modeling approaches that could be used today are demonstrated using examples from a case study building. A multizone network airflow model is used to simulate airflow rates, pressure relationships, and contaminant transport. These simulations are utilized to specify minimum ventilation rates to control non-occupant-related contaminants for a system with carbon dioxide demand control. Contaminant buildup during an overnight shutdown is also studied, and strategies for a pre-occupancy purge are developed. The model is also used to size an exhaust fan to negatively pressurize an enclosure housing a biological process. The design is then re-evaluated based on experimental measurements of envelope airtightness and contaminant emissions that were conducted in the building. The case study identifies the critical, or "design," conditions that must be addressed, discusses strategies that could be used to meet them with contaminant-based design, and considers the role that available measurements can take. 15 Refs.
Descriptors: *Air quality; Building codes; Impurities; Energy conservation; Environmental impact; Ventilation; Office buildings; Heat pump systems
Identifiers: Contaminant-based designs
Classification Codes:
451.2 (Air Pollution Control); 902.2 (Codes & Standards); 902.3 (Legal Aspects); 525.2 (Energy Conservation); 454.2 (Environmental Impact & Protection); 643.5 (Ventilation); 402.2 (Public Buildings); 616.1 (Heat Exchange Equipment & Components)
451 (Air Pollution); 402 (Buildings & Towers); 902 (Engineering Graphics; Engineering Standards; Patents); 525 (Energy Management); 454 (Environmental Engineering); 643 (Space Heating & Air Conditioning); 616 (Heat Exchangers)
45 (POLLUTION, SANITARY ENGINEERING & WASTES); 40 (CIVIL ENGINEERING, GENERAL); 90 (ENGINEERING, GENERAL); 52 (FUEL TECHNOLOGY); 64 (HEAT & THERMODYNAMICS); 61 (MECHANICAL ENGINEERING, PLANT & POWER)

15/5/5 (Item 5 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

06439148 E.I. Monthly No: EI9206074669
Title: Effect of tip clearance on the performance of an axial flow fan.
Author: Venter, S. J.; Kroeger, D. G.
Corporate Source: Univ of Stellenbosch, Stellenbosch, S Afr
Source: Energy Conversion and Management v 33 n 2 Feb 1992 p 89-97
Publication Year: 1992
CODEN: ECMADL ISSN: 0196-8904
Language: English
Document Type: JA; (Journal Article) Treatment: X; (Experimental)
Journal Announcement: 9206
Abstract: The effect of a change in clearance between the blade tip and the fan casing on the overall performance of an axial flow fan is investigated. A new approach, which accounts for the installation effect of a fan in its normal operating range, is employed. In the proposed method, changes in fan static pressure, volumetric flow rate and fan static efficiency are all evaluated, whereas normally the effect of tip clearance is presented only on fan static pressure and fan static efficiency for constant volumetric flow rates. The proposed method of evaluation is illustrated by applying it to experimental data generated in a standardized fan test facility. The hub to casing ratio of the fan investigated is 1:6.7. The test code used is BS 848: 1980: Type A, which is valid for a free inlet, free outlet installation. It is concluded that the tip clearance effects are dependent on the type of fan rotor, the size of the rotor, as well as the type of installation in which the fan is used. (Author abstract) 11 Refs.
Descriptors: *FANS--*Performance; HEAT EXCHANGERS; FLOW OF FLUIDS--Measurements
Identifiers: VOLUMETRIC FLOW RATE; AXIAL FLOW FAN; TIP CLEARANCE
Classification Codes:
618 (Compressors & Pumps); 616 (Heat Exchangers); 631 (Fluid Flow & Hydrodynamics)
61 (PLANT & POWER ENGINEERING); 63 (FLUID DYNAMICS & VACUUM TECHNOLOGY)

15/5/6 (Item 6 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05636889 E.I. Monthly No: EI8809083802
Title: FLOW CHARACTERISTICS AND PREDICTION OF THE SOUND PRESSURE LEVEL FOR A LOW PRESSURE DIAGONAL FLOW FAN (DIFFERENCE CAUSED BY THE TIP CLEARANCE).
Author: Kodama, Yoshio; Fukano, Tohru
Publication Year: 1988
CODEN: NKGBDD ISSN: 0387-5016
Language: Japanese
Document Type: JA; (Journal Article) Treatment: X; (Experimental)
Journal Announcement: 8809
Abstract: The effect of the tip clearance between the blade tip and the fan casing on the noise generated by a diagonal flow fan is examined over a wide range of the flow rate of a fan and discussed in relation to the characteristics of flow measured at a cross section beyhind the fan rotor. Wake width , which controls the fan noise level, increases with decreasing the flow rate of the fan, which results in the increase in the noise level. The increase in the tip clearance causes the increase in the wake width especially in the tip region of a fan blade. A method to estimate the wake width by the known quantity of the deviation angle of the flow is proposed and verified experimentally to be useful, which enable us to estimate the noise level even in the low fan flow rate region. (Author abstract) In Japanese. 7 refs.
Descriptors: *FANS--*Noise; NOISE, ACOUSTIC--Measurements; TURBOMACHINERY--Noise
Identifiers: TURBULENT NOISE; FAN NOISE; DIAGONAL FLOW FAN ; TIP CLEARANCE; WAKE WIDTH
Classification Codes:
618 (Compressors & Pumps); 751 (Acoustics)
61 (PLANT & POWER ENGINEERING); 75 (ACOUSTICAL TECHNOLOGY)

15/5/7 (Item 7 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04865573 E.I. Monthly No: EIM8504-021993
Title: EFFECT OF VARIABLE INLET GUIDE VANES ON OPERATING CHARACTERISTICS OF A TILT NACELLE INLET/POWERED FAN MODEL.
Author: Potonides, H. C.; Mebes, M. J.
Corporate Source: Grumman Aerospace Corp, Bethpage, NY, USA
Conference Title: AIAA/SAE/ASME 20th Joint Propulsion Conference.
Conference Location: Cincinnati, OH, USA Conference Date: 19840611
Sponsor: AIAA, New York, NY, USA; SAE, Warrendale, PA, USA; ASME, New York, NY, USA
E.I. Conference No.: 05159
Source: AIAA Paper Publ by AIAA, New York, NY, USA AIAA-84-1398, 11p
Publication Year: 1984
CODEN: AAPRAQ ISSN: 0146-3705
Language: English
Document Type: PA; (Conference Paper)
Journal Announcement: 8504
Abstract: Wind tunnel tests have been conducted to determine the effects of a Variable Inlet Guide Vane (VIGV) assembly on the operating characteristics of a V/STOL inlet and on the performance of a 20-in. fan engine. The results indicate that VIGVs are effective thrust modulators over a wide range of freestream velocities, nacelle angles -of-attack and fan speeds. The thrust modulation ranges, including the choking, the fan stall and the inlet separation boundaries, are presented. The installation of the VIGV assembly and diffuser modification with its compromised inlet area distribution caused significant losses of inlet angle-of-attack capability and produced increased levels of fan blade stress (in some cases at engine orders previously absent of all flight conditions of low and moderate angles-of-attack). 6 refs.
Descriptors: *AIRCRAFT ENGINES--*Performance; FANS
Identifiers: WIND TUNNEL TESTS; VARIABLE INLET GUIDE VANE ; FREESTREAM VELOCITIES; NACELLE ANGLE -OF-ATTACK; FAN STALL
Classification Codes:
653 (Aircraft Engines); 618 (Compressors & Pumps)
65 (AEROSPACE ENGINEERING); 61 (PLANT & POWER ENGINEERING)

15/5/8 (Item 8 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

03244010 E.I. Monthly No: EI72X048094
Title: Study of flow phenomena in the impeller passage by using a singularity method.
Author: REDDY, Y. R.; KAR, S.
Corporate Source: Univ of Technol, Loughborough, Leicester, England
Source: ASME Pap 71-WA/FE-23 for meeting Nov 28-Dec 2 1971, 7 p
Publication Year: 1971
Language: ENGLISH
Journal Announcement: 72X0
Abstract: The vortex, the velocity, and the pressure distribution along the vane surfaces are calculated for two impellers, one having six vanes and the other 12 vanes. The vanes were of logarithmic shape with a blade angle of 30 deg and impeller inlet to exit radius ratio of 0. 6. All the foregoing quantities were calculated for five different flow coefficients from 0. 05 to 0. 25 in steps of 0. 05 for both the impellers . In the case of impellers with 12 vanes , the flow phenomena were also calculated at a flow coefficient of 0. 16 so as to compare with the published results. 11 refs.
Descriptors: *PUMPS, CENTRIFUGAL--*Impellers; FLOW OF FLUIDS--Measurements; MATHEMATICAL INSTRUMENTS
Classification Codes:
618 (Compressors & Pumps); 631 (Fluid Flow & Hydrodynamics); 921 (Applied Mathematics)
61 (PLANT & POWER ENGINEERING); 63 (FLUID DYNAMICS & VACUUM TECHNOLOGY) ; 92 (ENGINEERING MATHEMATICS)

15/5/9 (Item 9 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

0000995634 E.I. No: 19580002395
Title: Effect of housing design on blower performance
Author: Brandt, E.J.
Source: Electrical Manufacturing v 60 n 5 Nov 1957 (New York, NY United States), p 116-121
Publication Year: 1957
Language: English
Document Type: JA; (Journal Article)
Abstract: Analysis of laboratory test data on variations in scroll shape and diffuser angle , housing width (with respect to wheel width), and effect of such variations on performance of blowers using single-inlet centrifugal impellers of squirrel cage type.
Descriptors: *Blowers

15/5/10 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

08202284 INSPEC Abstract Number: A2002-08-8760J-020, B2002-04-7510P-027, C2002-04-7330-131
Title: Parker weights revisited
Author(s): Wesarg, S.; Ebert, M.; Bortfeld, T.
Author Affiliation: Fraunhofer Inst. for Comput. Graphics, Darmstadt, Germany
Journal: Medical Physics vol.29, no.3 p.372-8
Publisher: AIP for American Assoc. Phys. Med,
Publication Date: March 2002 Country of Publication: USA
CODEN: MPHYA6 ISSN: 0094-2405
SICI: 0094-2405(200203)29:3L.372:PWR;1-B
Material Identity Number: M190-2002-003
U.S. Copyright Clearance Center Code: 0094-2405/2002/29(3)/372/7/$18.00
Document Number: S0094-2405(02)01403-7
Language: English Document Type: Journal Paper (JP)
Treatment: Theoretical (T); Experimental (X)
Abstract: The short-scan case in fan -beam computed tomography requires the introduction of a weighting function to handle redundant data. Parker introduced such a weighting function for a scan over pi plus the opening angle of the fan . In this article we derive a general class of weighting functions for arbitrary scan angles between pi plus fan angle and 2 pi (over-scan). These weighting functions lead to mathematically exact reconstructions in the continuous case. Parker weights are a special case of a weighting function that belongs to this class. It will be shown that Parker weights are not generally the best choice in terms of noise reduction, especially when there is considerable overscan. We derive a new weighting function that has a value of 0.5 for most of the redundant data and is smooth at the boundaries. (11 Refs)
Subfile: A B C
Descriptors: computerised tomography; electron device noise; image reconstruction; medical image processing
Identifiers: fan-beam computed tomography; weighting function; Parker weights; opening angle; arbitrary scan angles; mathematically exact reconstructions; noise reduction; redundant data; short-scan case
Class Codes: A8760J (X-rays and particle beams (medical uses)); A8770E (Patient diagnostic methods and instrumentation); B7510P (X-ray techniques: radiography and computed tomography (biomedical imaging/measurement)); B6135 (Optical, image and video signal processing); C7330 (Biology and medical computing); C5260B (Computer vision and image processing techniques)

15/5/11 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

07102738 INSPEC Abstract Number: A9902-4780-043

Title: Laser Doppler anemometer measurements upstream and downstream of an axial flow rotor cascade of adjustable stagger
Author(s): Vad, J.; Bencze, F.
Author Affiliation: Dept. of Fluid Mech., Tech. Univ. Budapest, Hungary
Conference Title: Proceedings 9th International Conference on Flow Measurement. FLOMEKO'98 p.579-84
Editor(s): Delsing, J.
Publisher: ITF, Kista, Sweden
Publication Date: 1998 Country of Publication: Sweden xii+594 pp.
ISBN: 91 630 6991 1 Material Identity Number: XX98-00651
Conference Title: Proceedings 9th International Conference on Flow Measurement
Conference Date: 15-17 June 1998 Conference Location: Lund, Sweden
Availability: CENTEK, Lula, University of Technology, SW-971 87 Lulea, Sweden
Language: English Document Type: Conference Paper (PA)
Treatment: Experimental (X)
Abstract: When an axial fan is built in a ventilation system, the flow rate and pressure rise requirements laid by the system often differ from the parameters for which the fan is designed . In such cases , a widely used method for tuning fan performance with system requirements is the appropriate adjustment of the stagger angle of rotor blades. Fans are expected to operate at a high hydraulic efficiency even for off-design stagger angles. This paper presents three-dimensional laser Doppler anemometer (LDA) measurements carried out upstream and downstream of an isolated axial fan rotor, for design and off-design stagger angles. The measured flow fields were studied in detail. Based on the measurements, design guidelines were sketched out for retaining high efficiency even in the case of a possible stagger adjustment. (13 Refs)
Subfile: A
Descriptors: flow measurement; laser Doppler anemometry; ventilation
Identifiers: laser Doppler anemometer measurements; axial flow rotor cascade; adjustable stagger; axial fan; ventilation system; flow rate; pressure rise requirements; fan performance; stagger angle; rotor blades; high hydraulic efficiency; off-design stagger angles; upstream; downstream; flow fields; design guidelines; high efficiency
Class Codes: A4780 (Instrumentation for fluid dynamics)

15/5/12 (Item 1 from file: 94)
DIALOG(R)File 94:JICST-EPlus

05908409 JICST ACCESSION NUMBER: 04A0767276 FILE SEGMENT: JICST-E
Development of Autonomous Design Technique for a Fan Using Numerical Optimization
IWASE TAKU (1); SUGIMURA KAZUYUKI (1); SHIMADA RYUICHI (1); TANNO TARO (2)
(1) Hitachi, Ltd.; (2) Japan Servo Co., Ltd.
Nihon Kikai Gakkai Nenji Taikai Koen Ronbunshu, 2004, VOL.2004,NO.Vol.2, PAGE.481-482, FIG.5, REF.3
JOURNAL NUMBER: X0587BAW
UNIVERSAL DECIMAL CLASSIFICATION: 621.51+621.61/.63
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
ARTICLE TYPE: Short Communication
MEDIA TYPE: Printed Publication
ABSTRACT: A cooling fan was designed using a system based on computational fluid dynamics (CFD) and numerical optimization. Commercial CFD software (STAR-CD) with an in-house automatic grid generator was used. A simulated annealing algorithm and response surface method using neural network for numerical optimization were also used to maximize fan efficiency and minimize casing height . Calculations show that optimized fans were more efficient and the casing height could be reduced, demonstrating that the system can be used to design more efficient and compact fans. A further finding was that there was a trade-off between fan efficiency and casing height . (author abst.)
DESCRIPTORS: axial flow blower; optimization; automatic design; technology development; computational fluid dynamics; optimization method; performance evaluation; optimum design; neural network; response surface methodology

IDENTIFIERS: axial fan
BROADER DESCRIPTORS: turbo blower; blower; fluid machinery; machinery; modification; design; research and development; development; fluid dynamics; continuum mechanics; mechanics; physics; natural science; science; evaluation; network
CLASSIFICATION CODE(S): QD03000U

15/5/13 (Item 2 from file: 94)
DIALOG(R)File 94:JICST-EPlus

05409379 JICST ACCESSION NUMBER: 03A0216299 FILE SEGMENT: JICST-E
Study on Effect of Casing Form on the Characteristics of Sirocco Fan .

ADACHI TSUTOMU (1); SUGITA NAOHIRO (1); OMORI SATOSHI (2)
(1) Osaka Ind. Univ., Fac. of Eng.; (2) Sanki Engineering Co., Ltd., JPN
Tabo Kikai(Turbomachinery), 2003, VOL.31,NO.4, PAGE.214-226, FIG.20, TBL.2, REF.11
JOURNAL NUMBER: S0391BAM ISSN NO: 0385-8839
UNIVERSAL DECIMAL CLASSIFICATION: 621.51+621.61/.63
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: An optimum casing shape determination method was introduced by clarifying the effects of volute casing shapes in which kinetic energy of flows of impellers is converted to static pressure on the blower characteristics. An numerical analysis (CFD) using pressure distribution measurement in the casing, a turbulence model, and a high Reynolds number type .KAPPA.-.EPSILON. model was conducted using two types of impellers with different characteristics and magnifying angles , the largest volute angle, and 21 types of casings with different width . This paper shows that blower characteristics become the best at casing magnifying angles of about 6.5 degrees, and that efficiency becomes the biggest in a region in which casing outer edge static pressure is circumferentially unified, because kinetic energy obtained from impellers is efficiently converted to static pressure. In addition, it was also confirmed that a stagnation point exists at a tongue tip part near the maximum efficiency point flow rate.
DESCRIPTORS: blower; aerodynamic characteristic; case; shape optimization; vortex chamber; impeller; extension(arrangement); angular dependence; pressure distribution; turbulence model; Reynolds number; numerical analysis; static pressure; energy conversion efficiency
IDENTIFIERS: sirocco fan
BROADER DESCRIPTORS: fluid machinery; machinery; characteristic; machine element; optimization; modification; housing; action and behavior; dependence; distribution; model; dimensionless number; numerical calculation; calculation; pressure; efficiency
CLASSIFICATION CODE(S): QD03000U

15/5/14 (Item 3 from file: 94)
DIALOG(R)File 94:JICST-EPlus

04708607 JICST ACCESSION NUMBER: 00A1026471 FILE SEGMENT: JICST-E
Turbulent Noise Generated by a Centrifugal Fan without Scroll Casing .

KODAMA YOSHIO (1); HAYASHI HIDECHITO (1); SANAGI TSUNEHISA (2); KINOSHITA KANJIRO (2)
(1) Nagasaki Univ., Fac. of Eng.; (2) Daikin Ind., Ltd.
Nippon Kikai Gakkai Ronbunshu. B(Transactions of the Japan Society of Mechanical Engineers. B), 2000, VOL.66,NO.650, PAGE.2577-2584, FIG.10, TBL.1, REF.11
JOURNAL NUMBER: F0036BAN ISSN NO: 0387-5016
UNIVERSAL DECIMAL CLASSIFICATION: 621.51+621.61/.63
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication

ABSTRACT: Estimation of turbulent noise level with L-weighting and A-weighting functions was proposed to a centrifugal fan without scroll casing . The validity of these formulae was examined experimentally in respect to the effects of parameters; inlet/outlet area ratio of impeller and five fan types. The agreement between the measured and the predicted values of the width of wake and the mean relative velocity was satisfactory. Moreover the experimental values of the overall turbulent noise with L-weighting and A-weighting functions agreed well with the predicted values. Finally, the effects of slip factor and the inlet/outlet area ratio of the impeller on the relative velocity, the width of wake, the sound pressure level and the specific noise level are shown. (author abst.)
DESCRIPTORS: centrifugal blower; fluid dynamic noise; turbulent flow; wake flow; impeller; boundary layer; noise level; numerical prediction; slip flow
BROADER DESCRIPTORS: turbo blower; blower; fluid machinery; machinery; noise(pollution); sound; disturbance; turbulence; fluid flow; machine element; layer; annoyance; forecast
CLASSIFICATION CODE(S): QD03000U

15/5/15 (Item 4 from file: 94)
DIALOG(R)File 94:JICST-EPlus

04386197 JICST ACCESSION NUMBER: 99A0985927 FILE SEGMENT: JICST-E
PIV Analysis of Flow in a Multi-blade Fan for Air conditioner of Auto-mobile.
FUJITA YASUNORI (1); TERUYA HIROSHI (1); YAMAMOTO KATSUICHI (1); KAWAHASHI MASAAKI (2); NABESHIMA TOORU (3)
(1) Zexel Corp., JPN; (2) Saitama Univ.; (3) Hitachi Constr. Mach. Co., Ltd.
Jidosha Gijutsukai Gakujutsu Koenkai Maezurishu, 1999, NO.94-99, PAGE.17-20 , FIG.6, REF.3
JOURNAL NUMBER: S0434AAR ISSN NO: 0919-1364
UNIVERSAL DECIMAL CLASSIFICATION: 629.33.04/.06 628.81/.82:629
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
ARTICLE TYPE: Short Communication
MEDIA TYPE: Printed Publication
ABSTRACT: The design technique of multi-blade fan using in air conditioner of auto-mobile has been well established. On the other hand, the requirements in functions of air conditioner, such as amenity, quiestness, high performance, space saving and so on, are increasing. In order to respond to the requirements, new challenges in fan design by means of numerical analysis or experimental techniques developed recently are needed. PIV is one of the most useful technique for experimental analysis of flow field in fan. The fundamental technique of PIV measurements of flow in a multi-blade fan has been established by the authors. In this report, the technique is applied to analyze flow in a multi-blade fan with a small size scroll casing , which was designed for space saving. (author abst.)
DESCRIPTORS: automotive air conditioner; centrifugal blower; particle image velocimetry; autocorrelation function; flow velocity distribution; flow field; impeller; internal flow; case; shroud; separated flow; pressure
IDENTIFIERS: negative pressure
BROADER DESCRIPTORS: air conditioning equipment; equipment; electric equipment; turbo blower; blower; fluid machinery; machinery; flow velocity measurement; velocity measurement; measurement; correlation function; function(mathematics); mapping(mathematics); velocity distribution; distribution; flow distribution; field; machine element; fluid flow
CLASSIFICATION CODE(S): QG03070C; PC03030X

15/5/16 (Item 1 from file: 6)
DIALOG(R)File 6:NTIS

1186094 NTIS Accession Number: DE85009484
Space Heating with Silicon Cell Activated Solar Grids. Final Technical Report

Briggs, A. R.
Briggs (Anglis R.), Newark, DE.
Corp. Source Codes: 083982000; 9518941
Sponsor: Department of Energy, Washington, DC.
Report No.: DOE/R3/08060-T1
Sep 82 35p
Languages: English
Journal Announcement: GRAI8519; NSA1000
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NTIS Prices: MF A01
Country of Publication: United States
Contract No.: FG43-81R308060
Solar grids were fabricated by cutting perforated aluminum sheets to fit the window wells of the test site home. The sheets were coated on the back (rough side) with a flat black oil-based paint. Low power air blowers were fabricated from 3 volt permanent magnet dc meters plus squirrel cage blower wheels 3'' wide by 1 1/2'' dia. Bennets for these air blowers were fabricated from plastic containers , the lid of the container serving as a mounting plate for the small dc meters. Heavy duty tension rods were used to hang the solar grids in the kitchen, living room, and bedroom of the test site home. Testing included collecting temp. data vs time of day, also blower speed, cell voltage and current. Results indicate that the system performed as anticipated after the larger size blowers were installed. Results obtained from east facing windows were better than expected since only south facing windows were considered in the proposed program. (ERA citation 10:027258)
Descriptors: *Blowers; *Solar Heating Systems; Electrical Properties; Fabrication; Installation; Performance Testing; Silicon Solar Cells; Temperature Measurement
Identifiers: ERDA/140901; NTISDE
Section Headings: 97N (Energy--Solar Energy); 97J (Energy--Heating and Cooling Systems); 89B (Building Industry Technology--Architectural Design and Environmental Engineering)

15/5/17 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

16143653 PASCAL No.: 03-0297682
Multizone modeling approaches to contaminant-based design. Discussion
Technical and symposium papers presented at the 2002 annual meeting of the American Society for Heating, Refrigerating and Air-Conditioning Engineers : Honolulu HI, 23-26 June 2002
MUSSER Amy; PERSILY Andrew K; KHALIFA H Ezzat comment; SCHOEN Larry comment; HIRNIKEL Dan comment
University of Nebraska-Lincoln, United States; National Institute of Standards and Technology, Gaithersburg, Md, United States; EQS Center, Syracuse University, Syracuse, N.Y., United States; Schoen Engineering, Inc., Columbia, Md., United States; Philip Morris USA, Richmond, Va., United States
American Society of Heating, Refrigeration and Air Conditioning Engineers , Atlanta GA, United States
American Society of Heating, Refrigerating and Air-Conditioning Engineers. Annual meeting (Honolulu HI USA) 2002-06-22
Journal: ASHRAE transactions, 2002, 108 (p.2) 803-810
ISSN: 0001-2505 Availability: INIST-6377 B; 354000108463770790
No. of Refs.: 15 ref.
Document Type: P (Serial); C (Conference Proceedings) ; A (Analytic)
Country of Publication: United States
Language: English
Indoor air quality is currently addressed in the design process primarily through prescriptive building codes based on specified flow rates. However, a contaminant-based design approach opens the door to design innovation, offering opportunities for improved indoor air quality, energy conservation, and reduced environmental impact. This paper discusses current design approaches and some possibilities for the future of contaminant-based design. Techniques and modeling approaches that could be

used today are demonstrated using examples from a case study building. A multizone network airflow model is used to simulate airflow rates, pressure relationships, and contaminant transport. These simulations are utilized to specify minimum ventilation rates to control non-occupant-relatedcontaminants for a system with carbon dioxide demandcontrol. Contaminant buildup during an overnight shutdown is also studied, and strategies for a pre-occupancy purge are developed. The model is also used to size an exhaust fan to negatively pressurize an enclosure housing a biological process. The design is then re-evaluated based on experimental measurements of envelope airtightness and contaminant emissions that were conducted in the building. The case study identifies the critical, or "design, " conditions that must be addressed, discusses strategies that could be used to meet them with contaminant-based design, and considers the role that available measurements can take.
English Descriptors: Ventilation; Air conditioning; Multizone air conditioning; Air quality; Indoor pollution; Modeling; Fan; Pressure

French Descriptors: Ventilation; Conditionnement air; Conditionnement multizone; Qualite air; Pollution interieur; Modelisation; Ventilateur; Pression

Classification Codes: 001D06D08D5; 230

15/5/18 (Item 2 from file: 144)
DIALOG(R)File 144:Pascal

15272693 PASCAL No.: 01-0442965
A study of slip factor and velocity components at the rotor exit of forward-curved squirrel cage fans, using laser Doppler anemometry
MONTAZERIN N; DAMANGIR A; FARD A Kazemi
Mechanical Engineering Department, Amirkabir University of Technology, Teheran, Iran
Journal: Proceedings of the Institution of Mechanical Engineers. Part A. Journal of power and energy, 2001, 215 (4) 453-463
ISSN: 0957-6509 Availability: INIST-6044A1; 354000096256420050
No. of Refs.: 21 ref.
Document Type: P (Serial) ; A (Analytic)
Country of Publication: United Kingdom
Language: English
Velocity profiles outside the rotor of four squirrel cage fans are measured in order to calculate their local slip factors. They show that the fluid exit angle from the rotor and the blade outlet angle of such fans are very different. Inlet configuration and volute spread angle both affected the direction of the flow out of the rotor and hence the slip factor. The general understanding in centrifugal turbomachines is that more energy transfer per unit mass is equivalent to a larger tangential component of velocity and therefore a larger slip factor. In squirrel cage fans a small slip factor results from a large radial velocity component out of the rotor. This gives a larger volumetric flowrate with no sensible head loss. The advantages of a large incidence angle and a large deviation mean that flow adherence to the blades is not always a prime design criterion in such fans.

English Descriptors: Fan ; Turbine wheel; Spiral casing ; Slip flow; Turbomachine casing; Experimental study; Doppler laser anemometer

French Descriptors: Ventilateur; Roue turbine; Volute spirale; Ecoulement glissant; Enveloppe turbomachine; Etude experimentale; Anemometre laser Doppler

Classification Codes: 001D12G

15/5/19 (Item 1 from file: 99)

DIALOG(R)File 99:Wilson Appl. Sci & Tech Abs

2123666 H.W. WILSON RECORD NUMBER: BAST00023193
Automotive compound reduces weight, assembly time
Molding Systems v. 58 no2 (Apr. 2000) p. 8
DOCUMENT TYPE: Feature Article ISSN: 0032-1273 LANGUAGE: English
RECORD STATUS: Corrected or revised record

ABSTRACT: A major European producer of automotive cooling system components has successfully overcome the shortcomings of 6/6 resin in its design of a large cooling fan housing . The large size of the cooling part and the tolerances between fixing points demanded higher performance than could be delivered by a standard glass-fiber reinforced grade, such as resin 6/6. After working on the problem, engineers at Th. Bergmann Kunststoffwerk GmbH--a business unit of M.A. Hanna of Cleveland, Ohio--and the company's manufacturing site in Barbastro, Spain, came up with Bergamid PA66 compound. This compound is a tailor-made material that incorporates glass fiber and mineral fillers to satisfy the various requirements. In tests, the resin demonstrated superior stiffness and reduced warpage when compared to competitive materials. The key to success was partnership with the customers in question and the ability of M.A. Hanna to customize the material to meet their requirements.
DESCRIPTORS: Automobiles--Heating, cooling, etc; Nylon--Molding; Fans (Machinery); M. A. Hanna Co;

15/5/20 (Item 1 from file: 95)
DIALOG(R)File 95:TEME-Technology & Management

00670430 M93053041566
Flow studies in ducted twin-rotor contra-rotating axial flow fans
(Stroemungsuntersuchungen am zweirotorigen gegenlaufenden Axialmantelgeblaese)
Roy, B; Ravibabu, K; Rao, PS; Basu, S; Raju, A; Murthy, PN
IIT Bombay, IND
ASME-Papers, v262, nJun, pp1-8, 1992
Document type: Conference paper Language: English
Record type: Abstract

ABSTRACT:
The design and testing of a 400 mm diameter contra-rotating fan unit was undertaken to study the flow behavior through the contra-rotating fans, and to find ways and mean of improving their design and performance. The performance characteristics of the two-fan unit have shown that large overall stall margins can be achieved. Also, the effect of axial gaps showed that at the design speed combination best performance was observed at an axial gap of 50 % of the 1st Fan chord. Studies on the 2nd fan exit flow field, performance characteristics of individual fans and casing boundary layer development have been made. Significant performance enhancement is observed with serration on 2nd fan rotor blade surface. When casing boundary layer suction is employed in between the two blades, the 2nd fan exist flow shows better uniformity and increased total pressure at all radii. However, to obtain a large operating range, careful optimization of the 2nd rotor blade design would be required, taking into account peculiarities shown by the present study in variation of deviation and exit flow angles of the individual fans , and casing boundary layer development with increased axial pressure gradient.

DESCRIPTORS: AXIAL BLOWERS; FLOW MEASUREMENT; ANTIROTATION; PRESSURE MEASUREMENT; FLOW DISTRIBUTION; IMPROVEMENT; PERFORMANCE EVALUATION
IDENTIFIERS: AXIALMANTELGEBLAESE; ZWEIROTORIGE AUSFUEHRUNG; Axialmantelgeblaese; Gegenlaufrotoren

15/5/21 (Item 1 from file: 62)
DIALOG(R)File 62:SPIN(R)

00978186
Parker weights revisited

Wesarg Matthias, Stefan, Ebert Thomas, Bortfeld
Fraunhofer Institute for Computer Graphics, Cognitive Computing and Medical Imaging (A7), Rundeturmstr. 6, 64283 Darmstadt, Germany ; MRC Systems GmbH, Hans-Bunte-Str. 10, 69123 Heidelberg, Germany ; Northeast Proton Therapy Center, 30 Fruit Street, Boston, Massachusetts 02114
MED. PHYS.; 29(3),372-378 (Mar. 2002) CODEN: MPHYA
Work Type: THEORETICAL
The short-scan case in fan -beam computed tomography requires the introduction of a weighting function to handle redundant data. Parker introduced such a weighting function for a scan over (pi) plus the opening angle of the fan . In this article we derive a general class of weighting functions for arbitrary scan angles between (pi) plus fan angle and 2 (pi) (over-scan). These weighting functions lead to mathematically exact reconstructions in the continuous case. Parker weights are a special case of a weighting function that belongs to this class. It will be shown that Parker weights are not generally the best choice in terms of noise reduction, especially when there is considerable overscan. We derive a new weighting function that has a value of 0.5 for most of the redundant data and is smooth at the boundaries. (Copyright) 2002 American Association of Physicists in Medicine.
PACS: *87.59.Fm, 42.30.Wb, 07.50.Hp
Descriptors: electron device noise ; computerised tomography ; image reconstruction ; medical image processing

15/5/22 (Item 1 from file: 239)
DIALOG(R)File 239:Mathsci

02804337 MR 98g#58030b
Correction to: ``Existence and behavior of the radial limits of a bounded capillary surface at a corner''.
Lancaster, Kirk E.
Siegel, David
Pacific J. Math.
Pacific Journal of Mathematics, 1997, 179, no. 2, 397--402. ISSN: 0030-8730 CODEN: PJMAAI
Language: English
Document Type: Journal
Journal Announcement: 9713
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: LONG (73 lines)
FEATURED REVIEW. \par\noindent In this remarkable and in some ways definitive paper, the authors characterize the behavior of radial limits $Rf(\theta)=\lim\sb {r\to0\sp +}f(r\cos\theta,r\sin\theta),\ {-\alpha}<\theta<\alpha$, for solutions of the capillary problem (1) $\nabla\cdot Tf=\kappa f+\lambda$ in $\Omega,\ \nu\cdot Tf=\cos\gamma$ on $\partial\Omega,\ Tf=\nabla f/\sqrt{1+\vert \nabla f\vert \sp 2}$, in a two-dimensional domain Ω with a corner point ${-\alpha}<\theta<\alpha$. Here κ and λ are constants, ν is an exterior unit normal, and γ is the ``contact angle'' on $\partial\Omega$, prescribed as a function of distance s from the vertex O. It can happen that no such radial limit exists for any θ in that range, as the authors demonstrate. However, they give natural conditions ensuring the existence and also the continuity of $Rf(\theta)$, and providing a priori information on possible behavior. In a case of principal interest, for which there exist $\lim\sb {s\to0+}\gamma\sp \pm(s)=\gamma\sb 0\sp \pm\ne0,\pi$, it is shown that there are fans of constant radial limits adjacent to each corner side, and explicit estimates are obtained for the size of the fans (in some cases , a ``central fan '' covering a half space and separated from the boundary fans by fans of monotone change can also exist). These estimates are later used in some striking ways; notably, conditions are given under which the fans overlap, thus ensuring continuity at O. These conditions are identical to the ones obtained by another procedure in a joint work of J. T. Chen, E. Miersemann and the reviewer [``Capillary surfaces in wedge domains'', in preparation]. It is not yet known whether the conditions are sharp.
The demonstrations for the theorems are somewhat technical, being based in part on estimates for conformal parametrizations and in part on blow-up procedures; the reviewer is inclined to the view that these are the initial proofs of beautiful theorems, and they will eventually be superseded by more perspicuous ones. The statements and demonstrations are, however, very

carefully presented, with scrupulous attention to detail.

The paper is perhaps as important for questions to which it calls attention as for those it answers. Notably, no general conditions are offered under which a central fan will appear. The paper does contain an example in which such behavior occurs, although that is not explicitly stated in the text. It is Example 2 on p. 184, in which the authors seem to be heading in that direction but do not complete the reasoning; some sentences may possibly have gone astray in the galleys. Because of symmetry the same limits are obtained on both sides of the vertex, thus excluding the cases D and I. According to Theorem 1 and the particular construction , the only case possible is DI, which entails a central fan .

Additionally, the necessary conditions for continuity of f at the vertex, and the possible behaviors when $\gamma\sp \pm\sb 0=0$ or π, remain open questions, as does the question of finding general asymptotic expansions at the vertex points. This last question was settled by Miersemann [Pacific J. Math. 157 (1993), no. 1, 95--107; MR 93m:35039] for ``subcritical'' opening angles (the singular case, not addressed in the present paper) in ``positive'' gravity fields. To the reviewer's knowledge, all other cases remain open.

The sufficient conditions obtained for continuity of f require $\alpha<\pi/2$. If $\alpha>\pi/2$, general sufficiency conditions are yet to be established. In the example mentioned above, $\alpha>\pi/2$ and f is discontinuous at the vertex, although the prescribed data are constant.

Unfortunately, due to a printer's error, the figures appear without captions and labels; this error is rectified in the correction (cited in the heading of this review).

The results of the paper relate closely to and complement independent work by P. Concus and the reviewer [SIAM J. Math. Anal. 27 (1996), no. 1, 56--69; MR 96m:76006] and by the reviewer [Calc. Var. Partial Differential Equations 4 (1996), no. 4, 305--322; MR 97f:53005].

In a later work [Z. Anal. Anwendungen 15 (1996), no. 4, 819--850; MR 97m:53011], the authors carry the investigation further, with estimates on the rate of approach to the limit values.

Reviewer: Finn, R. (1-STF)

Review Type: Featured review

Descriptors: *58E12 -Global analysis, analysis on manifolds (See also 32Cxx, 32Fxx, 46-XX, 47Hxx, 53Cxx; for geometric integration theory, see 49Q15)-Variational problems in infinite-dimensional spaces-Applications to minimal surfaces (problems in two independent variables) ; 35J60 -Partial differential equations-Partial differential equations of elliptic type (See also 58G05, 58G10)-Nonlinear PDE of elliptic type; 53A10 -Differential geometry (For differential topology, see 57Rxx. For foundational questions of differentiable manifolds, see 58Axx)-Classical differential geometry-Minimal surfaces, surfaces with prescribed mean curvature (See also 49Q05, 49Q10, 53C42)

19/5/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

11015183 E.I. No: EIP06209875634
Title: Study of wetting in an asymmetrical vane-wall gap in propellant tanks
Author: Chen, Yongkang ; Collicott, Steven H.
Corporate Source: Mechanical and Materials Engineering Department Portland State University, Portland, OR 97207-0751, United States
Source: AIAA Journal v 44 n 4 April 2006. p 859-867
Publication Year: 2006
CODEN: AIAJAH ISSN: 0001-1452
Language: English
Document Type: JA; (Journal Article) Treatment: T; (Theoretical)
Journal Announcement: 0605W4
Abstract: Wetting of an asymmetrical vane-wall gap geometry is investigated. The geometry is common in vane-type liquid propellant management devices. Critical wetting conditions are determined by applying the method by Concus and Finn (Concus, P., and Finn, R., "On Capillary Free Surfaces in the Absence of Gravity," Acta Mathematica, Vol. 132, 1974, pp. 177-198). The critical wetting condition is expressed in terms of critical contact angle as a function of gap size, with the vane thickness and obliquity angle as relevant parameters. It is found that the increase of both the vane thickness and the obliquity angle improves the critical wetting conditions. The analytical results are confirmed with Surface Evolver numerical computations, which also provide graphical descriptions of capillary surfaces. Results from drop tower experiments confirm the analysis and also reveal that the advance rate of the meniscus tip decreases with the gap size when other parameters are fixed. Copyright copy 2005 by Purdue University. 16 Refs.
Descriptors: *Wetting; Tanks (containers); Propellants; Vane pumps; Capillarity; Contact angle; Numerical methods
Identifiers: Numerical computations; Obliquity angle; Vane thickness; Surface Evolver
Classification Codes:
802.3 (Chemical Operations); 619.2 (Tanks); 618.2 (Pumps); 631.1 (Fluid Flow, General); 931.2 (Physical Properties of Gases, Liquids & Solids); 921.6 (Numerical Methods)
802 (Chemical Apparatus & Plants; Unit Operations; Unit Processes); 619 (Pipes, Tanks & Accessories; Plant Engineering Generally); 523 (Liquid Fuels); 618 (Compressors & Pumps); 631 (Fluid Flow); 931 (Applied Physics Generally); 921 (Applied Mathematics)
80 (CHEMICAL ENGINEERING, GENERAL); 61 (MECHANICAL ENGINEERING, PLANT & POWER); 52 (FUEL TECHNOLOGY); 63 (FLUID FLOW; HYDRAULICS, PNEUMATICS & VACUUM); 93 (ENGINEERING PHYSICS); 92 (ENGINEERING MATHEMATICS)

19/5/2 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

10798892 E.I. No: EIP06019629061
Title: CFD thermal analysis and optimization of motor cooling fin design
Author: Chen, Ya-Chi ; Chen, Bing-Chung; Chen, Chung-Lung; Dong, Jimmy Q.
Corporate Source: Applied Computational Physics Rockwell Scientific Company, Thousand Oaks, CA 91360, United States
Conference Title: 2005 ASME Summer Heat Transfer Conference, HT 2005
Conference Location: San Francisco, CA, United States Conference Date: 20050717-20050722
Sponsor: ASME Heat Transfer Division
E.I. Conference No.: 66315
Source: Proceedings of the ASME Summer Heat Transfer Conference Proceedings of the ASME Summer Heat Transfer Conference, HT 2005 v 3 2005.
Publication Year: 2005
ISBN: 0791847314
Language: English
Document Type: CA; (Conference Article) Treatment: T; (Theoretical)
Journal Announcement: 0601W2

Abstract: This study is focused on improving cooling performance of the housing fin for Total Enclosed Fan Cooled (TEFC) motors. We conducted a sensitivity study on the motor housing fin to determine key design parameters and developed an optimization procedure. The goal is to use the optimizer to achieve an efficient design process for optimal fin design under specified operating conditions. Response Surface Methodology (RSM) was constructed out of the numerical data with multi-quadratics (MQ) as basis functions to predict the response. The RSM, in conjunction with generic optimization methods, was used to find the optimal fin design in the parametric design space. The parameter database was non-dimensionalized so that the optimizer can be applied to various motor frame sizes. Compared with the original fin design, in some cases the optimal fin configuration reduces thermal resistance to heat convection from the fin surface by more than 50%. Copyright copy 2005 by ASME. 4 Refs.

Descriptors: *Computational fluid dynamics; Optimization; Cooling; Functions; Heat resistance; Numerical analysis

Identifiers: Response Surface Methodology (RSM); Multi-quadratics (MQ); Fin configuration

Classification Codes:

723.5 (Computer Applications); 921.5 (Optimization Techniques); 641.2 (Heat Transfer); 931.2 (Physical Properties of Gases, Liquids & Solids); 921.6 (Numerical Methods)

723 (Computer Software, Data Handling & Applications); 921 (Applied Mathematics); 641 (Heat & Mass Transfer; Thermodynamics); 931 (Applied Physics Generally)

72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS); 64 (HEAT & THERMODYNAMICS); 93 (ENGINEERING PHYSICS)

19/5/3 (Item 3 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)

10768636 E.I. No: EIP05519593645

Title: Experimental study on capillary flow in a vane-wall gap geometry

Author: Chen, Yongkang ; Collicott, Steven H.

Corporate Source: School of Aeronautics and Astronautics

Source: AIAA Journal v 43 n 11 November 2005. p 2395-2403

Publication Year: 2005

CODEN: AIAJAH ISSN: 0001-1452

Language: English

Document Type: JA; (Journal Article) Treatment: T; (Theoretical); X; (Experimental)

Journal Announcement: 0512w4

Abstract: Capillary flow in microgravity in the vane -wall gap geometry in a cylindrical container is studied experimentally. The flow is of interest because it affects the performance of vane-type propellant management devices, in which the vane-wall gap geometry is common. Different flow regimes, previously reported for the capillary flow in cylinders of various cross-section geometries, are identified using the data obtained in the Purdue University 1.2-s drop tower. Effects of geometric parameters, contact angle, and liquid viscosity on the flow are studied, with emphasis on the Lucas-Washburn flow regime. It is found that increases in gap size, liquid viscosity, contact angle, and vane edge bluntness decrease the capillary advance rate, while increases in the vane thickness and the vane obliquity angle enhance the capillary advance. In addition, some effort is made to gain insight into the interface profile with an approximate description. Copyright copy 2005 by Purdue University. 17 Refs.

Descriptors: *Capillary flow; Containers; Viscosity; Contact angle; Interfaces (materials); Approximation theory

Identifiers: Vane -wall gap geometry; Cylindrical containers ; Microgravity; Vane edge bluntness

Classification Codes:

631.1 (Fluid Flow, General); 931.2 (Physical Properties of Gases, Liquids & Solids); 921.6 (Numerical Methods)

631 (Fluid Flow); 691 (Bulk Handling & Unit Loads); 931 (Applied Physics Generally); 921 (Applied Mathematics)

63 (FLUID FLOW; HYDRAULICS, PNEUMATICS & VACUUM); 69 (MATERIALS HANDLING); 93 (ENGINEERING PHYSICS); 92 (ENGINEERING MATHEMATICS)

19/5/4 (Item 4 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05842655 E.I. Monthly No: EI9001004311
Title: Vortex-filament nature of reverse flow on the verge of rotating stall.
Author: Chen, Y. N. ; Haupt, U.; Rautenberg, M.
Corporate Source: Sulzer Brothers, Ltd, Winterthur, Switz
Source: Journal of Turbomachinery v 111 n 4 Oct 1989 p 450-461
Publication Year: 1989
CODEN: JOTUEI ISSN: 0889-504X
Language: English
Document Type: JA; (Journal Article) Treatment: X; (Experimental)
Journal Announcement: 9001
Abstract: On the verge of rotating stall, very orderly reverse flow forms from the outlet of the rotor/ impeller along the casing /shroud toward the inlet in axial/centrifugal compressors (Koch, 1970; Haupt, et al., 1987). The experiment on a centrifugal compressor reveals furthermore that the reverse flow is composed of stable spiral vortex filaments. Their vorticity can be transferred to the inlet tip vortex, known as prerotation. The behavior of these vortex filaments is examined based on the fundamental research work on rotating bodies available in the literature. This result shows that the vortex filaments are composed of Taylor's vortex pairs, but with unequal vortex strengths within the pair. They form the transition range from a laminar to a turbulent three-dimensional boundary layer with a very steep tangential velocity profile. (Edited author abstract) 31 Refs.
Descriptors: *FLOW OF FLUIDS--*Rotating; COMPRESSORS--Axial Flow; FLUID DYNAMICS
Identifiers: ROTATING STALL; REVERSE FLOW; FLOW VORTEX-FILAMENT NATURE; TAYLOR'S VORTEX PAIRS
Classification Codes:
631 (Fluid Flow & Hydrodynamics); 618 (Compressors & Pumps); 931 (Applied Physics)
63 (FLUID DYNAMICS & VACUUM TECHNOLOGY); 61 (PLANT & POWER ENGINEERING) ; 93 (ENGINEERING PHYSICS)

19/5/5 (Item 5 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

0001703464 E.I. No: 19620029660
Title: Water-pressure oscillations in volute casings of storage pumps
Author: Chen, Y.N.
Source: Sulzer Technical Review 1961 (Winterthur Switzerland), p 21-34
Publication Year: 1961
Language: English
Document Type: JA; (Journal Article)
Abstract: Pressure oscillation measurements in experimental storage pumps; calculations of oscillations in centrifugal pumps as related to number of diffuser and impeller vanes , dimensions of volute casing and speed of rotation; derivation of oscillation equations enabling pump design where pressure oscillations are greatly reduced. (Research Number)
Descriptors: *Pumps; Vibrations

19/5/6 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

12504046 PASCAL No.: 96-0174277
An experimental investigation of stator induced unsteadiness on centrifugal impeller outflow. Discussion. Authors' closure
UBALDI M; ZUNINO P; BARIGOZZI G; CATTANEI A; CHEN Y N comment
Istituto di Macchine e Sistemi Energetici, Universita di Genova, Genova, Italy
International Gas Turbine and Aeroengine Congress and Exposition, 39 (The Hague NLD) 1994-06-13
Journal: Journal of turbomachinery, 1996, 118 (1) 41-54
ISSN: 0889-504X CODEN: JOTUEI Availability: INIST-6120A2;

354000053448340050
No. of Refs.: dissem.
Document Type: P (Serial); C (Conference Proceedings) ; A (Analytic)
Country of Publication: USA
Language: English

Detailed flow measurements were taken in a centrifugal turbomachine model to investigate the aerodynamic influence of the vaned diffuser on the impeller flow. The model consists of an unshrouded centrifugal impeller with backswept blades and a rotatable vaned diffuser, which enables a continuous variation of the vaned diffuser location with respect to the measuring points. Phase-locked ensemble-averaged velocity components have been measured with hot-wire probes at the impeller outlet for 30 different relative positions of the probe with respect to the diffuser vanes. The data also include the distribution of the ensemble-averaged static pressure at the impeller front end, taken by means of miniature fast response pressure transducers flush-mounted at the impeller stationary casing . By circumferentially averaging the results obtained for the different circumferential probe locations, the periodically perturbed impeller flow has been split into a relative steady flow and a stator-generated unsteadiness. The results for the different probe positions have also been correlated in time to obtain instantaneous flow field images in the relative frame, which provide information on the various aspects of the diffuser vane upstream influence on the relative flow leaving the impeller.

English Descriptors: Radial flow turbomachinery; Unsteady flow; Experiments ; Aerodynamics; Turbomachine diffuser; Pressure distribution; Instrumentation; Hot wire anemometer; Velocity distribution

French Descriptors: Turbomachine radiale; Ecoulement instationnaire; Experience; Aerodynamique; Diffuseur turbomachine; Distribution pression; Appareillage; Anemometre fil chaud; Distribution vitesse

Classification Codes: 001D12G

19/5/7 (Item 1 from file: 95)
DIALOG(R)File 95:TEME-Technology & Management

01295983 M99032547651
Flow interaction between impeller and vaned diffuser for radial-bladed and 60 deg C-backswept centrifugal impellers
(Stroemungs-Wechselwirkung zwischen Laufrad und Schaufeldiffusor fuer radialbeschaufelte und 60-Grad-rueckgepfeilte Kreiselraeder)
Chen, YN ; Hagelstein, D; Haupt, U; Rautenberg, M
Thermische Stroemungsmaschinen: Turbokompressoren im industriellen Einsatz; Thermal Turbomachinery: Turbocompressors in Industrial Use, Tagung, Hannover, D, 6.-7. Okt, 1998VDI-Berichte, v1425, n1, pp79-90, 1998
Document type: Conference paper Language: English
Record type: Abstract
ISBN: 3-18-091425-4
ISSN: 0083-5560

ABSTRACT:
The experimental results reveal that the pressure variation in the semi-vaned space of the diffuser around the centrifugal impeller outlet is quite regular for the 60 degree-backswept impeller, but very irregular for the radial-bladed impeller despite the same condition of the entrance flow to both the impellers. The inlet edge of the blade of the radial-bladed impeller reacts on this irregularity at the outlet with very strong vibration, thus indicating a backward coupling from outlet to inlet. It is shown that this coupling mentioned is brought about by a momentary and thus impulsive reversal of the flow discharged by the radial-bladed impeller upon impinging on the vane of the diffuser. This impingement is favoured by the component of the intrinsic motion of the flow due to its backward curved path (Chen et al., 1996). The flow around the outlet of the diffuser vanes is furthermore non-uniform owing to its asymmetrical discharge out of the diffuser. Since the intrinsic motion of the discharged flow of the 60 degree-backswept impeller is very weak, no such a backward coupling does take place. The favourable condition of the 60 degree-backswept impeller with respect to the radial-bladed one is further found to lie in the transition of the flow from the impeller as a rotating system to the

diffuser in the inertial frame. Whilst a high pressure field is formed in the transition zone for the former case, a field of intrinsic motion with a deteriorating vortex flow prevails there for the latter case. Then, this vortex flow and the accompanying intrinsic motion travel into the downstream vane channels, and render the flow incapable of resisting the propagation of the non-uniformity of the outlet flow of the diffuser vanes into the front of the inlet of the vaned diffuser, enhancing the impulsive reverse flow mentioned. Therefore, it is found that the total pressure loss of the flow travelling through the vaned diffuser is much higher for the case of the radial-bladed impeller than for that of the 60 degree-backswept impeller.

DESCRIPTORS: BLADING; DIFFUSERS; EXPERIMENTAL RESULTS; OSCILLATION; COUPLING; VORTEX FLOW; REGURGITATION; TOTAL PRESSURE; PRESSURE LOSS; SECONDARY FLOW; FLOW VELOCITY
IDENTIFIERS: RUECKPFEILUNG; SCHAUFELDIFFUSOR; EINTRITTSECKE; AUSTRITTSSTROEMUNG; SCHAUFELKANAL; Kreiselrad; Beschaufelung; Rueckpfeilung ; Diffusor

19/5/8 (Item 2 from file: 95)

01295972 M99032571651
Difference in the flow behaviours of the semi-vaned spaces of diffusers in compressors with backswept and radial-bladed impellers
(Differenz im Stroemungsverhalten der halbbeschaufelten Diffusorkanaele in Verdichtern mit rueckgepfeilten und radialbeschaufelten Laufraedern)
Chen, YN ; Hagelstein, D; Haupt, U; Rautenberg, M
Thermische Stroemungsmaschinen: Turbokompressoren im industriellen Einsatz; Thermal Turbomachinery: Turbocompressors in Industrial Use, Tagung, Hannover, D, 6.-7. Okt, 1998VDI-Berichte, v1425, n1, pp225-236, 1998
Document type: Conference paper Language: English
Record type: Abstract
ISBN: 3-18-091425-4
ISSN: 0083-5560

ABSTRACT:
The flow within the semi-vaned space of the diffuser of the centrifugal compressor is different by using either backswept or radial-bladed impellers according to the present investigation based on the experimental results obtained at the Institute and found in the literature. It is shown that the secondary vortex low L (i.e. rotating in the same sense as the impeller revolution) dominates in the outlet section of the backswept impeller, whilst the intrinsic motion prevails in the outlet section of the radial-bladed impeller in addition to the vortex low L. This intrinsic motion is caused by the intense Coriolis force due to radially arranged blades. When the flow out of the rotating system of the backswept impeller enters the inertial system of the vaned diffuser, the vortex low L out of the impeller is converted into the vortex high H just in the entrance region of the semi-vaned space due to the mechanism of the vortex compression according to the vortex dynamics. A very strong pressure peak and unsteadiness of the streamlines were measured on the shroud surface associated with a pressure jump due to this vortex compression. However this pressure jump acts as a stagnation on the downstream flow, so that a rather uniform-flow field with an enhanced pressure prevails in front of the vaned channel. Since the vortex low L of the impeller gains strength with the decrease of the flow rate, the pressure peak becomes stronger accordingly. In case of the radial-bladed impeller , no such a conversion does take place. The vortex low L of the impeller remains as vortex L in the semi-vaned space because of the influence of the intrinsic motion, but appearing close to the vane inlet edge instead of the immediate entrance region of the diffuser applied for the case of the vortex high of the 60 degree-backswept impeller. It is getting into the influence sphere of the potential field of the vane cascade. Not unsteadiness of the isobarlines appears on the shroud surface any longer. However, the flow field is rather non-uniform down to the throat region due to the vortex low L.

DESCRIPTORS: DYNAMIC COMPRESSORS; BLADING; DIFFUSERS; FLOW FIELD; EXPERIMENTAL RESULTS; VORTEX FLOW; CORIOLIS FORCES; DYNAMICS; STREAM LINE;

PRESSURE; NON STEADY STATE; FLOW RATE
IDENTIFIERS: RUECKPFEILUNG; HALBBESCHAUFELTER DIFFUSORKANAL; AUSTRITTSOEFFNUNG; EINTRITTSGEBIET; DRUCKSPRUNG; Turboverdichter; Diffusor; Laufrad; Beschaufelung

19/5/9 (Item 3 from file: 95)
DIALOG(R)File 95:TEME-Technology & Management
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00669917 M93053301564
The vortex behaviour of the rotating -stall cell of a centrifugal compressor with vaned diffusor
(Das Wirbelverhalten des umlaufenden Stroemungsabrisselementes eines Kreiselverdichters mit Schaufeldiffusor)
Chen, YN ; Seidel, U; Haupt, U; Rautenberg, M
Sulzer Brothers, Winterthur, CH; Univ. Hannover, D
ASME-Papers, v101, nJun, pp1-11, 1992
Document type: Conference paper Language: English
Record type: Abstract

ABSTRACT:
The aerodynamic behaviour of the rotating-stall cell of a centrifugal compressor with radial blading and vaned diffuser is investigated experimentally using two stagnation pressure transducers located parallel to eachd other on the opposing walls of the semi-vaneless annular space between the impeller and the diffuser. The transducers are turned simultaneously step by step through an angle of 360 deg during the measurement, so that the flow field of both the forward and reverse flows and the swirl flow components can be detected in the stalled and the unstalled regions. It was shown in the previous papers of the authors (1991 b) that the jet and wake in the flow of the blade channel in the normal operating range are cores of longitudinal vortices with opposite rotational sense. During rotating stall, the jet of a blade channel bends over the outlet edge of the blade and is converted into the wake of the neighbouring one to form a vortex loop around the blade in question. The swirling speed of this vortex loop (the vorticity) is measured to be about twice impeller speed for the present case . The vortex loops of the adjacent blades then join together to form a bubble, the stall cell, embodying the region of the stalled blades.

DESCRIPTORS: AERODYNAMICS; PRACTICAL INVESTIGATIONS; FLOW FIELD; STALLING--FLUIDS; GUIDE VANES; DIFFUSERS; BLADING; DYNAMIC COMPRESSORS; COUNTERFLOW; VORTEX FLOW
IDENTIFIERS: Kreiselverdichter; Stroemungsabriss; Wirbel

19/5/10 (Item 1 from file: 239)
DIALOG(R)File 239:Mathsci
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03648730 MR 2005c#34141
New results on positive periodic solutions of a periodic integro-differential competition system.
Chen, Y. (Department of Mathematics, Wilfrid Laurier University, Waterloo, Ontario, N2L 3C5, Canada)
(Chen, Yu Ming 1)
Corporate Source Codes: 3-WLR
Appl. Math. Comput.
Applied Mathematics and Computation, 2004, 153, no. 2, 557--565.
ISSN: 0096-3003 CODEN: AMHCBQ
Language: English Summary Language: English
Document Type: Journal
Journal Announcement: 200414
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: SHORT (9 lines)
The author considers the periodic integro-differential competition system with infinite delays recently studied by M. Fan and K. Wang [ZAMM Z. Angew. Math. Mech. 81 (2001), no. 3, 197--203; \refmr MR1816321 (2001m:34159)\endrefmr]. Using the method of coincidence degree, he obtains another set of sufficient conditions for the system to have positive periodic solutions. The results are better than those by Fan and Wang for

the case when the fluctuation of the environment is small.
Reviewer: Kong, Qing Kai (1-NIL)
Review Type: Signed review
Descriptors: *34K13 -Ordinary differential equations-Functional-differential and differential-difference equations, with or without deviating arguments (See also 37-XX)-Periodic solutions ; 92D25 -Biology and other natural sciences-Genetics and population dynamics-Population dynamics (general)

File 347:JAPIO Dec 1976-2006/Jul(Updated 061116)
(c) 2006 JPO & JAPIO
File 350:Derwent WPIX 1963-2006/UD=200674
(c) 2006 The Thomson Corporation

Set	Items	Description
S1	391608	FAN? ? OR BLOWER? ? OR IMPELLER? ? OR PROPELLER? ? OR VANE? ? OR WINDVANE? ?
S2	48633	S1(7N)(HOUSING? ? OR CAGE OR CAGES OR ENCLOSURE? ? OR CASE? ? OR CASING? ? OR CONTAINER? ?)
S3	17796	(WHEEL OR S1)(5N)(DIMENSION? ? OR DEPTH OR DEEP OR SIZE OR HEIGHT OR WIDTH OR LENGTH)
S4	11116	(WHEEL OR CIRCLE OR CIRCULAR OR S1)(5N)RADIUS
S5	23657	(WHEEL OR CIRCLE OR CIRCULAR OR S1)(5N)ANGL???
S6	9	S2 AND S3 AND S4 AND S5

6/5,K/1 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

05677098 **Image available**
SCROLL TYPE CASING OF CENTRIFUGAL FAN

PUB. NO.: 09-291898 [JP 9291898 A]
PUBLISHED: November 11, 1997 (19971111)
INVENTOR(s): HAMADA YASUO
TOYODA KOICHI
HATAKEYAMA MAKOTO
NIIHARA NOBORU
APPLICANT(s): TOTO LTD [001008] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 08-109333 [JP 96109333]
FILED: April 30, 1996 (19960430)
INTL CLASS: [6] F04D-029/42
JAPIO CLASS: 24.1 (CHEMICAL ENGINEERING -- Fluid Transportation); 32.9 (POLLUTION CONTROL -- Other)

ABSTRACT

PROBLEM TO BE SOLVED: To enhance silencing performance by increasing an enlarged angle from the intake upstream side of the impeller of a centrifugal fan toward the intake downstream side thereof.

SOLUTION: The impeller 100 of a multiblade radial fan in which a plurality of radial vanes 103 is integrally connected together having intervals in a circumferential direction between a circular plate 101 and an annular plate 102, is stored in a scroll type casing 1. The scroll type casing 1 has a logarithmic spiral enlarged shape represented by formula r=r(sub o).exp(.theta.tan(.theta.(sub s)+.alpha.z)) wherein r is the radius of a casing side wall measured from the center of the impeller, r(sub o) is the outside radius of the impeller , .theta. is an angle from a datum line, .theta.(sub s) is a standard enlarged angle = tan(sup -1)((Q/S)/V), Q is the designed flow of blowing off wind of the impeller of a centrifugal fan, S is the outlet area of the impeller of the centrifugal fan, V is the designed circumferential speed of the periphery of the impeller of the centrifugal fan, .alpha. is a constant and z is a coordinate in a height direction in which a center in the height direction of the impeller is recognized as a cardinal point.

6/5,K/2 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO

00798299 **Image available**
CENTRIFUGAL BLOWER

PUB. NO.: 56-118599 [JP 56118599 A]
PUBLISHED: September 17, 1981 (19810917)
INVENTOR(s): SUGIZAKI HARUO
TAKASAKI YASUSHI
YASHIKI TAKASHI
IWATA MINORU
APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 55-020518 [JP 8020518]
FILED: February 22, 1980 (19800222)
INTL CLASS: [3] F04D-029/44; F04D-017/08
JAPIO CLASS: 24.1 (CHEMICAL ENGINEERING -- Fluid Transportation)
JOURNAL: Section: M, Section No. 103, Vol. 05, No. 203, Pg. 8, December 23, 1981 (19811223)

ABSTRACT

PURPOSE: To make a centrifugal blower in small size and with high efficiency as well as give the casing a sufficient capacity to accomodate the driver unit etc. in its exterior framing by designing the blower's configuration with the aid of a special equation so that the flow from the outlet of impeller to the spiral casing will have the optimum condition.

CONSTITUTION: The outlet angle .beta. of an impeller 13 shall be chosen between 160 deg.-180 deg.. The dfficiency of a blower will be the maximum, the noise level the minimum, and blower can be made in small size on the condition that the characteristic parameter X, which is expressed as above the illustration, is within an extent of -0.6--0.4, where A: Outlet area of impeller 12, B: Sectional area of throat 16 of spiral casing , .alpha.: Angle at outlet of impeller 12 formed from absolute flow speed to circumferential direction, .lambda.: Mean diffusive angle of spiral casing 1 with respect to circumferential direction, R(sub 2): Radius of outlet of impeller 12, and L: Distance from tongue tip 19 of spiral casing to discharge hole 17. Besides this, the casing shall be capable to accomodate a driver motor, auxiliary apparatuses, etc. in its exterior framing, that will provide possibility for staking transport without any restriction when the blower is to be stored or carried.

6/5,K/3 (Item 3 from file: 347)
DIALOG(R)File 347:JAPIO

00798298 **Image available**
CENTRIFUGAL BLOWER

PUB. NO.: 56-118598 [JP 56118598 A]
PUBLISHED: September 17, 1981 (19810917)
INVENTOR(s): TSUJI ISAO
SUGIZAKI HARUO
IWATA MINORU
APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 55-020517 [JP 8020517]
FILED: February 22, 1980 (19800222)
INTL CLASS: [3] F04D-029/44; F04D-017/08
JAPIO CLASS: 24.1 (CHEMICAL ENGINEERING -- Fluid Transportation)
JOURNAL: Section: M, Section No. 103, Vol. 05, No. 203, Pg. 8, December 23, 1981 (19811223)

ABSTRACT

PURPOSE: To make a centrifugal blower in small size and with high efficiency by application of the diffusion theory, with which the flow from the outlet of impeller of a multivane blower to the spiral casing is considered as a divergent flow, and by using an equation to determine the configuration of this part.

CONSTITUTION: The outlet angle .beta. of an impeller 3 of multivane blower shall be chosen between 160 deg.-180 deg.. The configuration from the outlet of impeller 2 to the spiral casing 1 is designed so that the characteristic parameter X, which can be expressed as above the illustration, will be in an extent of -0.6--0.4, where A: Outlet area of impeller 2, B: Sectional area of throat 6 of spiral casing , .alpha.: Angle at outlet of impeller 2 formed from absolute flow speed to circumferential direction, .lambda.: Mean diffusive angle of spiral casing 1 with respect to circumferential direction, R(sub 2) Radius of outlet of impeller 2, and L: Distance from tongue tip 9 of spiral casing to discharge hole 7. According to this design, the divergent flow from the outlet of impeller 2 to the spiral casing 1 will have the optimum condition and the efficiency of the blower can be greatly enhanced.

6/5,K/4 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0015035133 - Drawing available
WPI ACC NO: 2005-383124/200539
XRPX Acc No: N2005-310466
Method for determining shape of scroll cage for forward-curved centrifugal blower wheel used in air conditioner, involves plotting scroll cage profile on polar coordinates starting at blower cut-off end, using calculated polar angle
Patent Assignee: CHEN Y (CHEN-I)

Inventor: CHEN Y
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20050096767	A1	20050505	US 2003701206	A	20031104	200539 B

Priority Applications (no., kind, date): US 2003701206 A 20031104

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20050096767	A1	EN	12	6	

Alerting Abstract US A1

NOVELTY - The method involves calculating the polar angle between the radial line from the center of blower wheel to the blower cut-off end and the radial line from the center of wheel to the discharge point of scroll cage , using parameter indicating the radius of blower circle and distance from center of wheel to discharge point. The scroll cage profile is plotted on polar coordinates starting at cut-off end, using calculated angle.

USE - For determining shape of scroll cage for forward-curved centrifugal blower wheel used in air conditioner.

ADVANTAGE - Enables providing a scroll cage optimally designed within given geometry constraints to minimize losses when dynamic energy of air being circulated is converted to static energy in the scroll cage.

DESCRIPTION OF DRAWINGS - The figure shows the flowchart scroll cage shape determination process.

Title Terms/Index Terms/Additional Words: METHOD; DETERMINE; SHAPE; SCROLL; CAGE; FORWARD; CURVE; CENTRIFUGE; BLOW; WHEEL; AIR; CONDITION; PLOT; PROFILE; POLE; COORDINATE; START; CUT; END; CALCULATE; ANGLE

Class Codes
International Classification (Main): G06F-019/00
US Classification, Issued: 700097000, 703007000

File Segment: EPI;
DWPI Class: T01; X25; X27
Manual Codes (EPI/S-X): T01-J04E; T01-J15H; X25-L04; X27-E01B1

6/5,K/5 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0011118650 - Drawing available
WPI ACC NO: 2002-054827/200207
Related WPI Acc No: 2001-647503
XRAM Acc No: C2002-015579
Separator assembly for vacuum cleaner, has body including longitudinally extending vanes with each vane presenting curved flow surface
Patent Assignee: REXAIR INC (REXA-N)
Inventor: GUSTAFSON E L; KASSIEN J R
Patent Family (2 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20010039878	A1	20011115	US 2000552275	A	20000419	200207 B
			US 2001910573	A	20010720	
US 6391101	B2	20020521	US 2000552275	A	20000419	200239 E
			US 2001910573	A	20010720	

Priority Applications (no., kind, date): US 2000552275 A 20000419; US 2001910573 A 20010720

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20010039878	A1	EN	12	7	Continuation of application US 2000552275
US 6391101	B2	EN			Continuation of application US 2000552275
					Continuation of patent US 6306199

Alerting Abstract US A1

NOVELTY - A separator assembly has body including longitudinally extending vanes spaced apart from one another. Each vane has first and second ends that are interconnected by an angled flow surface for increased particulate separation as the body rotates.

DESCRIPTION - A separator assembly comprises an annular housing having an open upper end defined by an upper lip (44), a bottom portion (46), and a body (34) extending between the lip and bottom portion. The housing is operable to rotate at a longitudinal axis to generate a centrifugal force to be applied to ingested fluid. A fluid intake formed within the body draws the ingested fluid with particulates into an interior space within the housing. A fluid exhaust expels fluid and particulates upwardly from the interior space through the open upper end. The body includes longitudinally extending vanes (38) spaced apart from one another to define the intake. Each of the vanes has a first end connected to the upper lip and a second end connected to the bottom portion. The first and second ends are interconnected by an angled flow surface for increased particulate separation as the body rotates about the axis of rotation.

INDEPENDENT CLAIMS are also included for the following:

1.a vacuum cleaner comprising a housing , a motor, a fan for generating a vacuum airflow through an air intake port in the housing, and a separator for separating dust and dirt particulates entrained in air ingested through the intake port; and

2.a method of separating particulates from fluid ingested into a vacuum cleaner, comprising drawing fluid having particulates into a vacuum cleaner housing, drawing the fluid and particulates into a water bath, drawing fluid and remaining particulates to and outer surface of a separator, separating particulates from the fluid via a curved flow surface, increasing fluid flow inside the separator with secondary particle impacting vanes, and expelling the remaining minute particulates from the separator via an exhaust.

USE - For a vacuum cleaner for household use.

ADVANTAGE - The assembly effectively separates fine dust and dirt particulates from the intake air. It reduces foaming caused by the addition of cleaning chemicals and fragrances to the water bath, and increases airflow so that separation can be increased more efficiently.

DESCRIPTION OF DRAWINGS - The figure shows an elevational perspective view of a separator.

34 Body
38 Vanes
42 Secondary particle impacting vanes
44 Lip
46 Bottom portion

Title Terms/Index Terms/Additional Words: SEPARATE; ASSEMBLE; VACUUM; CLEAN ; BODY; LONGITUDE; EXTEND; VANE; PRESENT; CURVE; FLOW; SURFACE

Class Codes
International Classification (Main): B01D-047/02
US Classification, Issued: 095226000, 096333000, 096359000, 096333000, 015353000, 096337000, 096359000, 055DIG

File Segment: CPI
DWPI Class: J01
Manual Codes (CPI/A-M): J01-G02

Alerting Abstract ...a vacuum cleaner comprising a housing , a motor, a fan for generating a vacuum airflow through an air intake port in the housing, and a...

Technology Focus

...separator by presenting a side surface defined by at least one arc extending along the length of each of the vanes . Each curved surface has a similar radius of curvature so that proximal vanes are nested to each other. The longitudinally extending vanes are angled to the axis of rotation. Anti-foaming mechanism are integrated within the housing . Secondary particle impacting vanes (42) are formed within the bottom portion for trapping particulates within the housing.

Original Publication Data by Authority

Original Abstracts:
A vacuum cleaner apparatus includes a housing, a motor disposed within the housing and having an output shaft, and a fan coupled to the output shaft for generating a vacuum airflow through an air intake port...

...A vacuum cleaner apparatus includes a housing, a motor disposed within the housing and having an output shaft, and a fan coupled to the output shaft for generating a vacuum airflow through an air intake port...
Claims:
...claimed is:1. A vacuum cleaner apparatus comprising:a housing;a motor disposed within said housing and having an output shaft;a fan coupled to said output shaft for generating a vacuum airflow through an air intake port...

6/5,K/6 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0008506915 - Drawing available
WPI ACC NO: 1998-037789/
XRPX Acc No: N1998-030269
Scroll type casing for centrifugal fan - has extended part whose extension angle increases facing from suction upstream to suction downstream and governed by following equation
Patent Assignee: TOTO LTD (TTOC)
Inventor: HAMADA Y; HATAKEYAMA M; NIIHARA N; TOYODA K
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
JP 9291898	A	19971111	JP 1996109333	A	19960430	199804 B

Priority Applications (no., kind, date): JP 1996109333 A 19960430

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
JP 9291898	A	JA	4	4	

Alerting Abstract JP A
The casing includes an extension part with an extension angle which increases facing from suction upstream to suction downstream. The following equations govern the shape of extension part r=ro exp ((THETA) tan ((theta)c+(ALPHA)z)) (theta)c=tan raised to -1 ((Q/s)/v) In the above equation for Z suction upstream side of the impeller is assumed to be negative and suction downstream side of impeller is assumed to be positive.
r being radius from impeller centre to casing side wall, ro being impeller outer radius , (THETA) being angle from reference line, (theta)c being standard extension angle, Q being design flow quantity, S being height from exit to impeller , V being impeller design peripheral velocity, Z being height direction co-ordinates based on impeller 's centre of height direction, (ALPHA) is a constant
ADVANTAGE - Reduces noise of centrifugal fan.

Title Terms/Index Terms/Additional Words: SCROLL; TYPE; CASING; CENTRIFUGE; FAN; EXTEND; PART; ANGLE; INCREASE; FACE; SUCTION; UPSTREAM; DOWNSTREAM; GOVERN; FOLLOW; EQUATE

Class Codes
International Classification (Main): F04D-029/42

File Segment: EngPI; ;
DWPI Class: Q56
Scroll type casing for centrifugal fan -

6/5,K/7 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0008051206 - Drawing available
WPI ACC NO: 1997-145786/
XRPX Acc No: N1997-120496
Calculation and precision processing of cardiocle and expanded cardioid casing curved surfaces for eccentric rotor vane pumps - using given formulae for X and Y Cartesian coordinates, and polar coordinates
Patent Assignee: LEE D (LEED-I); LEE D S (LEED-I); PARK Y (PARK-I); PARK Y H (PARK-I)
Inventor: LEE D; LEE D S; PARK Y; PARK Y H
Patent Family (8 patents, 63 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 1997005391	A1	19970213	WO 1996KR118	A	19960726	199713	B
AU 199665330	A	19970226	AU 199665330	A	19960726	199725	E
KR 1997005503	A	19970219	KR 199522580	A	19950727	199809	E
EP 842364	A1	19980520	EP 1996925150	A	19960726	199824	E
			WO 1996KR118	A	19960726		
CN 1197503	A	19981028	CN 1996197182	A	19960726	199911	E
JP 11512163	W	19991019	WO 1996KR118	A	19960726	200001	E
			JP 1997507488	A	19960726		
KR 173342	B1	19990218	KR 199522580	A	19950727	200041	E
US 6236897	B1	20010522	WO 1996KR118	A	19960726	200130	E
			US 1999440	A	19990216		

Priority Applications (no., kind, date): KR 199522580 A 19950727

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 1997005391	A1	EN	27	11	

National Designated States,Original: AL AM AU BB BG BR CA CN CZ EE FI GE HU IS JP KG KP LK LR LT LV MD MG MK MN MX NO NZ PL RO SG SI SK TR TT UA US UZ VN
Regional Designated States,Original: AT BE CH DE DK EA ES FI FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG

AU 199665330	A	EN		Based on OPI patent	WO 1997005391
EP 842364	A1	EN		PCT Application	WO 1996KR118
				Based on OPI patent	WO 1997005391

Regional Designated States,Original: DE GB

JP 11512163	W	JA	26	PCT Application	WO 1996KR118
				Based on OPI patent	WO 1997005391
US 6236897	B1	EN		PCT Application	WO 1996KR118
				Based on OPI patent	WO 1997005391

Alerting Abstract WO A1

A typical vane type pump comprises an eccentric rotor within which are a series of vanes sliding in slots and spring loaded to bear continuously on the inside of the casing. The design and manufacture of such a pump would be simplified if it was possible to use solid fixed length vanes with no requirement for separately maintaining vane contact with the casing using springs.

To control the accuracy of the machined casing inner surface and thus to allow the vane edge to match surface curvature no matter what the rotation angle or eccentricity may be. The equation (A) for cardiocles and (B) for expanded cardioids, is given, and these represent the curves drawn by movement of fixed vanes in an eccentric rotor vane pump.

USE/ADVANTAGE - For mass mfr of large sized pumps of one metre or larger diameter. Improved manufacturing accuracy allowing considerable simplification of pump detailed design, using CNC techniques.

Title Terms/Index Terms/Additional Words: CALCULATE; PRECISION; PROCESS; EXPAND; CARDIOID; CASING; CURVE; SURFACE; ECCENTRIC; ROTOR; VANE; PUMP; FORMULA; CARTESIAN; COORDINATE; POLE

Class Codes
International Classification (Main): B23P-023/00, B23Q-015/00, F04C-018/22, F04C-002/344, G06F-017/11
(Additional/Secondary): F01C-001/22, F01C-021/10, F04C-002/22
US Classification, Issued: 700067000, 700017000, 418150000

File Segment: EngPI; ;
DWPI Class: P56; Q51; Q56

6/5,K/8 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0006766877 - Drawing available
WPI ACC NO: 1994-151416/
XRPX ACC No: N1994-118742
Sliding vane machine with reduced vane friction - has radial vane guide running in housing guide tracks to control vane movement
Patent Assignee: FANJA LTD (FANJ-N)
Inventor: HEDELIN L; HEDELIN L G
Patent Family (10 patents, 20 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update	
WO 1994009260	A1	19940428	WO 1993SE841	A	19931014	199418	B
SE 199203034	A	19940416	SE 19923034	A	19921015	199424	E
AU 199453463	A	19940509	AU 199453463	A	19931014	199432	E
EP 682740	A1	19951122	EP 1993923699	A	19931014	199551	E
			WO 1993SE841	A	19931014		
US 5558511	A	19960924	WO 1993SE841	A	19931014	199644	E
			US 1995411758	A	19950330		
JP 8503045	W	19960402	WO 1993SE841	A	19931014	199645	E
			JP 1994509911	A	19931014		
AU 680208	B	19970724	AU 199453463	A	19931014	199737	E
BR 199307238	A	19990824	BR 19937238	A	19931014	200001	E
			WO 1993SE841	A	19931014		
EP 682740	B1	20000920	EP 1993923699	A	19931014	200047	E
			WO 1993SE841	A	19931014		
DE 69329469	E	20001026	DE 69329469	A	19931014	200061	E
			EP 1993923699	A	19931014		
			WO 1993SE841	A	19931014		

Priority Applications (no., kind, date): SE 19923034 A 19921015

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 1994009260	A1	EN	18	6	
National Designated States,Original: AU BR JP KR US					
Regional Designated States,Original: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE					
SE 199203034	A	SV			
AU 199453463	A	EN			Based on OPI patent WO 1994009260
EP 682740	A1	EN	23	2	PCT Application WO 1993SE841
					Based on OPI patent WO 1994009260
Regional Designated States,Original: DE ES FR GB IT SE					
US 5558511	A	EN	7	6	PCT Application WO 1993SE841
					Based on OPI patent WO 1994009260
JP 8503045	W	JA	17		PCT Application WO 1993SE841
					Based on OPI patent WO 1994009260
AU 680208	B	EN			Previously issued patent AU 9453463
					Based on OPI patent WO 1994009260
BR 199307238	A	PT			PCT Application WO 1993SE841
					Based on OPI patent WO 1994009260
EP 682740	B1	EN			PCT Application WO 1993SE841
					Based on OPI patent WO 1994009260
Regional Designated States,Original: DE ES FR GB IT SE					
DE 69329469	E	DE			Application EP 1993923699
					PCT Application WO 1993SE841
					Based on OPI patent EP 682740
					Based on OPI patent WO 1994009260

Alerting Abstract WO A1
The machine rotor (11) eccentrically placed in the housing (1) has numerous vanes (13) guided in grooves (12) in the rotor for radial movement. The vanes , rotor and housing define chambers (14) for transferring a fluid medium from an inlet (15) opening to an outlet (16) opening.
The vanes are guided by at least one guide means (17,18) which runs along a guide race (19) in the housing. The guide race and/or housing edge are shaped so that the radially distal end of each vane follows the interior contours of the housing .

USE/ADVANTAGE - The sliding vane machine can run faster and be made larger without vane / housing friction and wear causing maintenance problems.

Title Terms/Index Terms/Additional Words: SLIDE; VANE; MACHINE; REDUCE; FRICTION; RADIAL; GUIDE; RUN; HOUSING; TRACK; CONTROL; MOVEMENT

Class Codes
International Classification (Main): F01C-001/344
(Additional/Secondary): F01C-021/12, F04C-018/344, F04C-002/344
US Classification, Issued: 418150000, 418159000, 418264000

...an inlet opening (15) in the housing (1) to a delivery opening (16) in the housing , the movement of each of the vanes (13) relative to the rotor (11) being guided by means of at least one guide...

...the rotational axis (8a) at the rotor (11) and the interior circumferential surface of the housing (1), C = the length of the vane (13) from the center of the guide means (17,18) for that vane to the...

...of the guide race (19), b = the radius of the guide race (19), which is circular , phi = the angle between the radius of the rotor (11) at its point of contact with the inside of the housing...

...an inlet opening (15) in the housing (1) to a delivery opening (16) in the housing , the movement of each of the vanes (13) relative to the rotor (11) being guided by means of at least one guide...

...in a plane perpendicular to the rotational axis (8a) of the rotor (11)C=the length of the vane (13) from the center of the guide means (17, 18) to the radially distal end

6/5,K/9 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

0005681895 - Drawing available
WPI ACC NO: 1991-293589/
XRPX Acc No: N1991-224708
Seed head comb unit - has comb implement in form of rim with inner impeller and clamp and conveyor elements on upper surface
Patent Assignee: BEZHETSKSELMASH WKS (BEZH-R)
Inventor: GOLDOVICH V P; KALININ V V; KALUGIN V M
Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
SU 1604218	A	19901107	SU 4624389	A	19881222	199140 B

Priority Applications (no., kind, date): SU 4624389 A 19881222

Alerting Abstract SU A
The comb unit, especially for a flax harvester, consists of a clamp conveyor (1) in the form of two adjacent belts, and a rotary comb implement. The comb implement is in the form of a rim (3), mounted on a shaft and with its upper surface equipped with clamp and conveyor elements.
The rear section of the rim is covered by a curved and spring loaded vane (7) of the same radius as the rim, and both the rim and vane are set at an acute angle to the clamp conveyor. The interior of the rim contains an impeller (5), and the rim is enclosed in a casing (6). As the vane is spring loaded, the width of the comb slit is varied in accordance with the thickness of the flax stem strip fed into the comb unit.
ADVANTAGE - Gives more reliable operation and improved performance. Bul. 41/7.11.90 @(2pp Dwg.No.2/2)@

Title Terms/Index Terms/Additional Words: SEED; HEAD; COMB; UNIT; IMPLEMENT ; FORM; RIM; INNER; IMPEL; CLAMP; CONVEYOR; ELEMENT; UPPER; SURFACE

Class Codes
(Additional/Secondary): A01D-045/06